



UNITED STATES

DEPARTMENT OF THE INTERIOR

GEOLOGICAL SURVEY

EFFECTS OF URBANIZATION ON THE MAGNITUDE AND FREQUENCY OF FLOODS
ON SMALL STREAMS IN TENNESSEE--BASIC DATA REPORT NO. 3

by Clarence H. Robbins

Open-File Report 84-242

Prepared in cooperation with the
TENNESSEE DEPARTMENT OF TRANSPORTATION and
THE U.S. DEPARTMENT OF TRANSPORTATION,
FEDERAL HIGHWAY ADMINISTRATION



Nashville, Tennessee

1984

Report Documentation Page			<i>Form Approved OMB No. 0704-0188</i>	
<p>Public reporting burden for the collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to a penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.</p>				
1. REPORT DATE 1984	2. REPORT TYPE N/A	3. DATES COVERED -		
4. TITLE AND SUBTITLE Effects of Urbanization on the Magnitude and Frequency of Floods on Small Streams in Tennessee--Basic Data Report No. 3			5a. CONTRACT NUMBER	
			5b. GRANT NUMBER	
			5c. PROGRAM ELEMENT NUMBER	
6. AUTHOR(S)			5d. PROJECT NUMBER	
			5e. TASK NUMBER	
			5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) U.S. Department of the Interior 1849 C Street, NW Washington, DC 20240			8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)			10. SPONSOR/MONITOR'S ACRONYM(S)	
			11. SPONSOR/MONITOR'S REPORT NUMBER(S)	
12. DISTRIBUTION/AVAILABILITY STATEMENT Approved for public release, distribution unlimited				
13. SUPPLEMENTARY NOTES				
14. ABSTRACT				
15. SUBJECT TERMS				
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT SAR	18. NUMBER OF PAGES 35
a. REPORT unclassified	b. ABSTRACT unclassified	c. THIS PAGE unclassified		

UNITED STATES DEPARTMENT OF THE INTERIOR

WILLIAM P. CLARK, Secretary

GEOLOGICAL SURVEY

Dallas L. Peck, Director

For additional information write to:

District Chief
U.S. Geological Survey
A-413 Federal Bldg. -
U.S. Courthouse
Nashville, TN 37203

Copies of this report can be
purchased from:

Open-File Services Section
Western Distribution Branch
Box 25425, Federal Center
Lakewood, CO 80225
(Telephone: (303) 234-5888)

CONTENTS

	Page
Introduction.....	1
Explanation of data.....	3
References.....	4
Hydrologic data.....	5

ILLUSTRATIONS

Figure 1. Map of Tennessee showing location of gaging stations.....	2
--	---

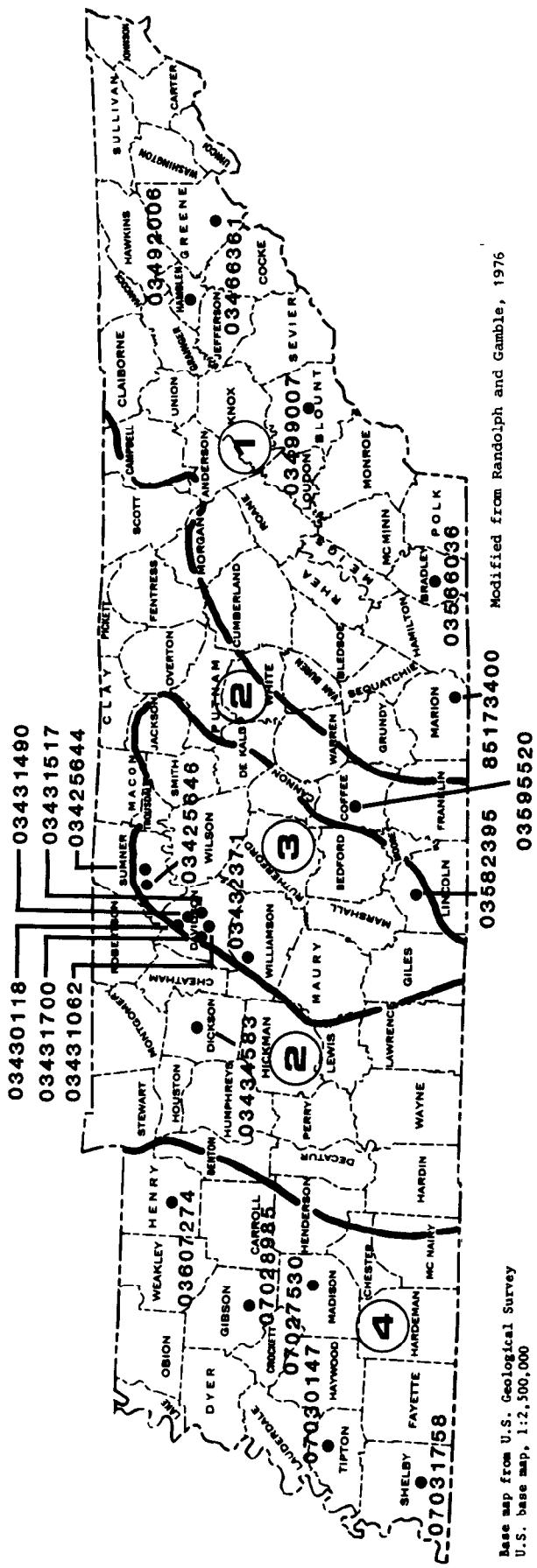
EFFECTS OF URBANIZATION ON THE MAGNITUDE AND FREQUENCY
OF FLOODS ON SMALL STREAMS IN TENNESSEE - BASIC DATA REPORT NO. 3

by Clarence H. Robbins

INTRODUCTION

Engineers involved in bridge, culvert, and highway design often need to know the magnitude and frequency of discharge from small streams where the drainage basin is urbanized. To develop reliable methods for determining the frequency of floods on small streams in Tennessee where urbanization is a factor, considerable amounts of runoff data are needed. However, long-term runoff data from urban areas in Tennessee have not been collected except in large urban areas. To improve the reliability of estimating flood peaks in all urban areas of Tennessee, the U.S. Geological Survey and the Tennessee Department of Transportation began a program in July 1977 to collect concurrent rainfall-runoff data on streams draining less than about 25 square miles in urban areas with populations between 5,000 and 100,000. These rainfall-runoff data will be used to calibrate a U.S. Geological Survey Rainfall-Runoff Model to estimate synthetic urban flood data statewide.

Twenty-one data-collection sites have been instrumented across Tennessee (fig. 1). Each of the four hydrologic areas, as defined in the report "Technique for Estimating Magnitude and Frequency of Floods in Tennessee" (Randolph and Gamble, 1976), are represented.



EXPLANATION

03431490 Site and number

Hydrologic area boundary

3 Hydrologic area number

25 0 25 50 100 Miles
25 0 25 50 100 Kilometers

Figure 1.-- Location of gaging stations.

This report summarizes data collected at the 21 sites from July 1977 to September 1983 and is the third and final basic data report to be released during this Statewide Urban Hydrology project. The data presented in this report updates and replaces data in Basic Data Report No. 2 (Robbins, 1982).

EXPLANATION OF DATA

Data tabulated for each site consists of pertinent basin characteristics and floods above a predetermined discharge rate.

Basin characteristics: The basin drainage area (D.A.) is shown in square miles. The principal stream length (L), in miles, is the distance from the drainage divide to the gage and was measured from 7 1/2-minute topographic maps. The main channel slope (S), in feet per mile, is the difference in elevation at points 10 percent and 85 percent of the main channel length measured upstream from the gage and divided by 75 percent of the stream length. Pervious, impervious, non-effective impervious, and noncontributing area (in percent of total area) were measured from aerial photographs of each site.

Runoff events: Column headings are self-explanatory. Rainfall data are not available for some floods because of equipment malfunctions. In addition, rainfall distribution over the basin for some storms was such that no rainfall was recorded at the gage. The "Total accumulated rainfall" is the total amount of rainfall associated with each runoff event.

REFERENCES

Randolph, W. J., and Gamble, C. R., 1976, Technique for estimating magnitude and frequency of floods in Tennessee: Tennessee Department of Transportation, 52 p.

Robbins, C. H., 1982, Effects of urbanization on the magnitude and frequency of floods on small streams in Tennessee--Basic data report no. 2: U.S. Geological Survey Open-File Report 82-911, 25 p.

**HYDROLOGIC
DATA**

CUMBERLAND RIVER BASIN

03425644 Town Creek above Gallatin, TN

Location.--Lat $36^{\circ}24'17''$, long $86^{\circ}25'36''$, Sumner County, 200 feet above culvert on U.S. Highway 31E, 1.3 miles northeast of intersection of highway 109 and 31E in Gallatin.

Gage and history.--Dual digital recorders with 5-minute punch intervals, housed in separate shelters. Station established May 8, 1981. Datum of gage is set to an arbitrary elevation.

Basin characteristics.--D. A. = 2.25 mi^2 ; L = 2.52 mi ; S = 68.8 ft/mi ; percent pervious = 97.66; percent impervious = 2.28; percent noneffective impervious = 0.06; percent noncontributing D. A. = 0.

Remarks.--All peaks are listed.

Runoff events

Date	Total rain- fall (in)	Maxi- accumu- lated rain- fall (in)	Maxi- 5- minute inten- sity (in)	Stage	Dis- charge (ft ³ /s)	Date	Total rain- fall (in)	Maxi- accumu- lated rain- fall (in)	Maxi- 5- minute inten- sity (in)	Stage	Dis- charge (ft ³ /s)
5/18/81	1.03	.25	2.03	127	4/ 8/83	0.80	.12	1.77	94		
5/19/81	0.81	.13	1.41	53	4/23/83	1.67	.07	2.74	256		
6/ 1/81	1.51	.22	3.23	375	5/ 3/83	1.42	.14	1.85	103		
6/ 2/92	0.38	.10	1.12	28.2	5/11/83	1.90	.36	3.27	387		
6/ 6/81	2.22	.11	2.91	297	5/15/83	1.62	.10	1.80	97		
6/10/81	1.69	.31	5.55	1,250	5/18/83	2.67	.10	3.31	400		
8/16/81	1.93	.33	1.54	65	5/19/83	1.79	.08	5.25	1,110		
9/15/81	2.01	.25	1.37	49	5/21/83	1.36	.24	5.64	1,300		
12/21/81	1.53	.05	1.57	66	6/ 4/83	2.46	.31	3.94	595		
1/ 2/82	1.81	.10	3.40	425	6/17/83	2.24	.54	3.42	435		
1/ 3/82	1.19	.15	2.59	225	6/19/83	1.71	.23	3.84	560		
1/20/82	1.01	.09	2.82	275	7/ 5/83	0.78	.34	1.38	51		
1/23/82	1.18	.18	3.40	425							
2/ 8/82	2.05	.06	3.34	405							
3/15/82	0.84	.09	2.65	237							
4/ 3/82	0.47	.34	1.51	63.5							
5/ 7/82	2.43	.10	2.57	222							
5/28/82	1.96	.31	4.59	820							
12/15/82	1.80	.02	2.27	168							
12/25/82	2.26	.13	3.22	375							
1/22/83	1.27	.02	1.19	34							
2/ 2/83	1.06	.02	2.94	300							
3/ 6/83	1.32	.05	2.57	222							
4/ 5/83	1.68	.05	2.42	194							

CUMBERLAND RIVER BASIN

03425646 Town Creek at Gallatin, TN

Location.--Lat $36^{\circ}22'50''$, long $86^{\circ}27'15''$, Sumner County, at bridge on Maple Street, 1.6 miles upstream from mouth.

Gage and history.--Dual digital recorders with 5-minute punch intervals, housed in separate shelters. Station established October 28, 1977. Datum of gage is set to an arbitrary elevation.

Basin characteristics.--D. A. = 5.00 mi^2 ; L = 5.07 mi ; S = 37.6 ft/mi ; percent previous = 90.36; percent impervious = 5.55; percent noneffective impervious = 3.79; percent noncontributing D. A. = 0.30.

Remarks.--Peaks above 5.0 feet are listed.

Runoff events

Date	Total accumu- lated rain- fall (in)	Maxi- mum 5- minute inten- sity (in)	Stage	Dis- charge (ft ³ /s)	Date	Total accumu- lated rain- fall (in)	Maxi- mum 5- minute inten- sity (in)	Stage	Dis- charge (ft ³ /s)
12/ 5/77	1.58	.21	6.96	891	6/ 1/81	1.45	.21	6.00	586
1/ 25/78	2.04	.04	5.87	545	6/ 6/81	2.47	.11	6.53	749
3/14/78	2.01	.22	7.20	975	6/10/81	1.78	.41	9.03	1,820
5/ 8/78	2.86	.15	8.47	1,530	8/15/81	2.18	.47	5.19	362
5/12/78	1.29	.28	6.45	724	12/ 1/81	1.47	.05	5.64	478
7/25/78	2.06	.19	5.18	359	1/ 2/82	2.97	.12	7.11	943
8/11/78	2.32	.29	5.08	332	7/28/82	2.13	.52	5.96	573
9/11/78	1.73	.32	5.67	487	12/15/82	1.88	.04	5.49	438
12/ 3/78	4.87	.33	9.84	2,330	12/25/82	2.40	.17	6.87	860
12/ 7/78	2.93	.30	9.14	1,890	12/26/82	0.75	.01	6.60	771
12/ 8/78	4.94	.26	9.50	2,100	4/ 5/83	1.68	.04	5.73	504
1/ 1/79	2.47	.11	6.66	790	4/23/83	1.72	.05	6.12	621
1/ 7/79	1.99	.04	5.57	459	5/18/83	2.74	.16	6.79	833
1/20/79	1.78	.05	5.72	501	5/19/83	1.84	.14	9.43	2,082
4/ 2/79	2.02	.07	5.77	515	5/21/83	2.07	.29	9.25	1,961
4/12/79	1.63	.08	6.00	586	6/ 4/83	2.37	.37	7.66	1,161
5/ 4/79	2.57	.11	5.57	459	6/17/83	1.80	.44	7.42	1,063
9/13/79	5.91	.28	8.43	1,510	6/19/83	2.35	.28	7.78	1,212
9/21/79	2.44	.12	7.18	968					
9/27/79	1.66	.07	5.72	501					
12/13/79	3.04	.06	6.65	787					
3/ 8/80	1.30	.22	5.08	332					
3/17/80	1.24	.05	5.32	395					
3/20/80	2.48	.19	7.07	929					
3/28/80	1.19	.10	6.83	846					
5/18/81	2.51	.38	5.60	467					

CUMBERLAND RIVER BASIN

03430118 McCrory Creek at Ironwood Drive, at Donelson, TN

Location.--Lat 36°09'07", long 86°39'02", Davidson County, at bridge on Ironwood Drive, 1.3 miles southeast of intersection of U.S. Highway 70 (Lebanon Road) and Donelson Pike in Donelson.

Gage and history.--Dual digital recorders with 5-minute punch intervals, housed in separate shelters. Station established November 17, 1975. Datum of gage is 430.63 feet National Geodetic Vertical Datum of 1929.

Basin characteristics.--D. A. = 7.31 mi²; L = 4.48 mi; S = 26.8 ft/mi; percent pervious = 92.93; percent impervious = 5.74; percent noneffective impervious = 0.30; percent noncontributing D. A. = 1.03.

Remarks.--Peaks above 3.0 feet are listed.

Runoff events

Date	Total fall (in)	Maxi- mum 5- rain- fall inten- sity (in)	Stage (ft)	Dis- charge (ft ³ /s)	Date	Total rain- fall (in)	Maxi- mum 5- rain- fall inten- sity (in)	Stage (ft)	Dis- charge (ft ³ /s)
9/27/76	1.09	.14	3.39	208	4/ 1/79	1.74	.17	6.99	1,345
10/30/76	1.19	.08	3.64	250	4/ 2/79	1.58	.17	5.92	879
3/ 3/77	2.47	.05	5.39	691	4/12/79	1.77	.15	5.88	864
3/ 4/77	0.81	.03	5.24	643	5/ 3/79	2.98	.26	4.31	388
3/12/77	1.86	.09	6.21	993	5/ 4/79	1.24	.11	9.20	2,520
4/ 1/77	0.09	.02	3.22	182	8/25/79	2.16	.18	6.13	961
4/ 3/77	1.66	.05	5.46	714	9/13/79	5.51	.33	9.50	2,685
4/ 4/77	1.27	.07	6.55	1,140	9/21/79	2.57	.19	7.18	1,440
4/23/77	2.91	.31	6.44	1,090	10/28/79	1.70	.13	4.97	561
6/25/77	0.83	.20	3.31	195	11/ 1/79	1.85	.06	4.39	407
11/21/77	1.70	.28	4.46	424	11/25/79	1.14	.25	5.04	582
12/ 4/77	1.05	.07	4.39	407	3/20/80	2.68	.07	5.49	724
12/ 5/77	1.28	.15	6.27	1,018	3/28/80	1.38	.06	5.69	794
1/ 8/78	1.45	.15	3.20	179	5/17/80	3.43	.13	5.73	808
1/25/78	1.76	.03	4.66	475	5/19/80	1.46	.17	5.22	636
3/14/78	2.14	.18	6.82	1,263	4/19/81	1.27	.52	5.13	609
5/28/78	0.46	.15	4.50	434	6/ 6/81	3.55	.37	7.04	1,370
6/21/78	0	-	3.17	175	6/ 7/81	0	-	5.58	755
12/ 3/78	4.15	.33	5.82	841	1/22/82	1.00	.12	5.18	624
12/ 8/78	6.49	.49	8.09	1,940	2/ 8/82	2.28	.08	6.23	1,000
1/ 1/79	2.26	.11	5.00	570	3/15/82	1.13	.06	3.76	272
1/ 7/79	2.23	.05	4.92	547	4/17/82	1.53	.24	4.77	504
1/20/79	-	-	3.66	254	5/ 7/82	2.04	.08	4.38	404
1/21/79	0	-	3.20	179	5/18/82	1.49	.63	3.74	268
3/31/79	1.11	.19	3.21	180					

CUMBERLAND RIVER BASIN

03431062 Mill Creek tributary at Glenrose Avenue, at Woodbine, TN

Location.--Lat 36°07'02", long 86°43'37", Davidson County, at culvert under Glenrose Avenue, 1.1 miles northeast of intersection of Nolensville Road and Thompson Lane in Woodbine, TN.

Gage and history.--Dual digital recorders with 5-minute punch intervals, housed in separate shelters. Station established February 9, 1976. Datum of gage is set to an arbitrary elevation.

Basin characteristics.--D. A. = 1.17 mi²; L = 1.61 mi; S = 78.5 ft/mi; percent pervious = 76.09; percent impervious = 22.81; percent noneffective impervious = 1.10; percent noncontributing D. A. = 0.

Remarks.--Peaks above 3.0 feet are listed.

Runoff events

Date	Total rain- fall (in)	Maxi- mum 5- rain- fall inten- sity (in)	Stage (ft)	Dis- charge (ft ³ /s)	Date	Total rain- fall (in)	Maxi- mum 5- rain- fall inten- sity (in)	Stage (ft)	Dis- charge (ft ³ /s)
	accu- mulated rain- fall (in)	min- ute inten- sity (in)	Dis- charge (ft ³ /s)	accu- mulated rain- fall (in)		min- ute inten- sity (in)	Dis- charge (ft ³ /s)	Dis- charge (ft ³ /s)	
9/27/76	1.00	.17	3.25	118	9/13/79	6.38	.54	*7.03	-
10/6/76	1.43	.10	3.14	107	9/21/79	2.44	.10	3.13	106
3/12/77	2.24	.07	3.14	107	10/28/79	1.77	.12	3.24	117
4/4/77	2.90	.05	3.05	98.3	11/25/79	1.03	.14	3.22	115
4/23/77	0.60	.11	3.04	97.4	3/20/80	2.83	.11	3.00	93.6
6/24/77	0.44	.28	3.49	143	3/28/80	1.52	.07	3.17	110
6/25/77	1.01	.22	3.17	110	4/8/80	1.50	.15	3.00	93.6
9/5/77	1.11	.25	3.64	159	4/13/80	1.19	.07	3.06	99.3
11/21/77	1.42	.21	3.64	159	5/17/80	5.06	.10	4.79	301
12/4/77	1.06	.12	3.12	105	6/29/80	2.62	.42	4.77	298
12/5/77	0.95	.17	3.41	134	7/2/80	0.61	.12	3.29	122
3/13/78	1.45	.15	3.76	172	7/22/80	1.79	.20	3.44	137
5/3/78	0.61	.11	3.01	94.6	7/27/80	0.49	.16	3.05	98.3
5/8/78	1.64	.23	4.71	290	4/19/81	1.21	.58	3.91	190
8/25/78	0.77	.23	3.28	121	5/10/81	0.49	.17	3.14	107
10/13/78	1.34	.11	3.00	93.6	5/18/81	0.81	.53	3.66	161
12/8/78	5.69	.34	5.82	452	6/4/81	0.69	.22	3.72	168
4/1/79	1.72	.23	3.27	120	6/6/81	2.74	.29	4.15	218
4/12/79	1.90	.20	3.37	130	6/12/81	0.69	.22	3.33	126
5/3/79	3.03	.30	3.40	133	6/25/81	1.14	.32	3.60	154
5/4/79	1.21	.11	*9.05	-	7/6/81	1.36	.42	3.93	192
7/21/79	0.96	.17	3.04	97.4	7/17/81	0.63	.08	3.47	140
8/1/79	0.55	.20	3.04	97.4	7/27/81	0.29	.12	3.09	102
8/25/79	1.73	.30	3.74	170	8/29/81	1.21	.35	3.27	120
8/26/79	1.25	.19	3.25	118	2/8/82	0	-	3.11	104

* Stage exceeds upper end of rating curve.

CUMBERLAND RIVER BASIN

03431062 Mill Creek tributary at Glenrose Avenue, at Woodbine, TN--Continued

Runoff events

Date	Total accumu- lated rain- fall	Maxi- mum 5- minute inten- sity	Dis- charge	Stage	Date	Total accumu- lated rain- fall	Maxi- mum 5- minute inten- sity	Dis- charge	Stage	
	(in)	(in)	(ft)	(ft ³ /s)		(in)	(in)	(ft)	(ft ³ /s)	
4/17/82	1.49	.18	3.36	129						
7/21/82	0.89	.13	4.43	254						
8/23/82	0.39	.17	3.19	112						

CUMBERLAND RIVER BASIN

03431490 Pages Branch at Avondale, TN

Location.--Lat $36^{\circ}12'22''$, long $86^{\circ}46'24''$, Davidson County, at culvert under Trinity Lane, 900 feet east of intersection of Interstate 65 and Trinity Lane at Avondale.

Gage and history.--Dual digital recorders with 5-minute punch intervals, housed in separate shelters. Station established February 11, 1976. Datum of gage is set to an arbitrary elevation.

Basin characteristics.--D. A. = 2.01 mi²; L = 2.27 mi; S = 97.1 ft/mi; percent pervious = 84.07; percent impervious = 14.97; percent noneffective impervious = 0.96; percent noncontributing D. A. = 0.

Remarks.--Peaks above 3.0 feet are listed.

Runoff events

Date	Total accumu- lated rain- fall (in)	Maxi- mum 5- rain- fall inten- sity (in)	Dis- charge (ft ³ /s)	Date	Total accumu- lated rain- fall (in)	Maxi- mum 5- rain- fall inten- sity (in)	Dis- charge (ft ³ /s)		
	Stage (ft)	Stage (ft)	Dis- charge (ft ³ /s)		Stage (ft)	Stage (ft)	Dis- charge (ft ³ /s)		
10/30/76	1.21	.04	3.04	71.1	9/21/79	2.59	.32	4.52	471
2/23/77	1.77	.07	3.66	207	11/1/79	2.05	.10	3.45	155
3/3/77	2.37	.06	4.10	334	11/23/79	1.82	.07	3.13	85.7
3/12/77	2.28	.16	4.94	627	11/25/79	0.87	.06	3.48	163
4/4/77	1.49	.10	4.08	327	12/12/79	1.79	.06	3.45	155
8/16/77	1.20	.33	3.21	101	12/13/79	1.15	.04	3.85	260
10/8/77	2.12	.06	3.14	87.5	12/23/79	1.40	.04	3.04	71.1
11/21/77	1.32	.12	3.17	92.9	3/17/80	0.64	.01	3.48	163
11/29/77	1.25	.07	3.09	78.9	3/20/80	2.64	.04	4.18	360
12/4/77	0.97	.04	3.29	118	3/24/80	0.82	.01	3.04	71.1
12/5/77	0.70	.07	3.98	297	3/28/80	0.94	.01	4.10	334
3/13/78	1.37	.18	4.25	383	4/13/80	0.08	.01	3.69	215
9/21/78	0.96	.24	3.79	242	5/17/80	-	-	5.37	809
11/17/78	0.83	.13	3.76	234	5/19/80	1.85	.46	4.78	565
12/3/78	4.80	.27	6.20	1,200	5/22/80	0.98	.08	3.17	92.9
12/7/78	2.53	.27	5.49	860	3/30/81	1.49	.14	3.01	66.8
12/8/78	4.21	.13	6.13	1,160	5/19/81	1.63	.15	3.07	75.7
12/20/78	1.13	.16	3.76	234	6/6/81	2.18	.09	3.65	204
12/31/78	1.12	.06	4.01	306	6/10/81	0.72	.23	3.03	69.7
1/1/79	1.36	.05	4.65	517	6/12/81	0.76	.29	3.66	207
1/7/79	1.95	.05	4.20	366	9/3/81	2.31	.27	3.46	158
1/20/79	1.87	.03	4.10	334	11/30/81	1.62	.05	3.50	167
3/10/79	0.32	.04	3.05	72.6	1/1/82	2.28	.10	4.23	376
4/12/79	1.91	.14	4.05	318	1/16/82	1.21	.08	3.87	266
5/3/79	2.62	.26	3.68	212	1/19/82	1.35	.16	3.65	204
5/4/79	0.91	.05	4.09	331	3/15/82	1.49	.14	3.98	297
7/8/79	1.24	.21	3.01	66.8	4/17/82	1.27	.10	3.40	144
9/13/79	5.35	.37	5.12	702	4/26/82	1.09	.32	3.14	87.5

CUMBERLAND RIVER BASIN

034 31490 Pages Branch at Avondale, TN--Continued

Runoff events

Date	Total fall (in)	Maxi- mum 5- rain- fall inten- sity (in)	Stage	Dis- charge (ft ³ /s)	Date	Total rain- fall (in)	Maxi- mum 5- rain- fall inten- sity (in)	Stage	Dis- charge (ft ³ /s)
	accumu- lated rain- fall inten- sity (in)	minute (ft)	charge (ft ³ /s)	accumu- lated rain- fall inten- sity (in)		minute (ft)	charge (ft ³ /s)	Stage	charge (ft ³ /s)
5/ 7/82	1.95	.09	3.18	94.8					
6/28/82	1.56	.01	3.74	228					
7/ 6/82	1.77	.36	3.82	251					
7/ 7/82	0.60	.15	3.17	92.9					
9/13/82	3.59	.48	5.27	768					

CUMBERLAND RIVER BASIN

03431517 Cummings Branch at Lickton, TN

Location.--Lat $36^{\circ}18'25''$, long $86^{\circ}48'00''$, Davidson County, on right downstream wingwall of bridge, on Shaw Road, 900 feet above confluence with Shaw Branch, 0.8 miles northeast of Lickton.

Gage and history.--Dual digital recorders with 5-minute punch intervals, housed in separate shelters. Station established December 1, 1975. Datum of gage is 532.25 feet National Geodetic Vertical Datum of 1929.

Basin characteristics.--D. A. = 2.40 mi^2 ; L = 2.71 mi; S = 71.4 ft/mi; percent pervious = 98.16; percent impervious = 1.84; percent noneffective impervious = 0; percent noncontributing D. A. = 0.

Remarks.--Peaks above 2.6 feet are listed.

Runoff events

Date	Total accumu- lated rain- fall (in)	Maxi- mum 5- minute inten- sity (in)	Stage (ft)	Dis- charge (ft ³ /s)	Date	Total accumu- lated rain- fall (in)	Maxi- mum 5- minute inten- sity (in)	Stage (ft)	Dis- charge (ft ³ /s)
2/23/77	1.94	.06	2.62	47.2	12/25/82	1.75	.12	2.80	65.9
3/ 3/77	2.28	.19	3.35	149	4/ 5/83	1.77	.05	3.00	92.0
3/12/77	2.81	.09	4.74	616					
3/13/78	1.39	.23	2.92	80.8					
12/ 3/78	4.85	.24	3.27	135					
12/ 7/78	3.25	.26	3.68	224					
12/ 8/78	4.05	.18	4.39	456					
1/ 1/79	1.82	.05	3.32	144					
4/ 2/79	2.28	.12	3.29	138					
4/12/79	2.21	.14	3.54	189					
6/ 3/79	1.19	.09	2.68	53.0					
9/13/79	5.53	.17	5.21	881					
11/ 1/79	2.49	.30	3.01	93.4					
12/13/79	2.74	.06	3.16	116					
5/17/80	4.00	.13	4.78	636					
6/29/80	2.49	.27	2.88	75.6					
6/ 1/81	2.08	.18	4.19	382					
6/ 6/81	2.03	.12	3.11	108					
1/ 2/82	1.77	.09	2.81	67.1					
1/ 3/82	1.46	.14	3.44	167					
3/15/82	0.94	.11	2.82	68.3					
4/16/82	1.41	.22	3.07	102					
4/17/82	1.47	.14	3.28	136					
4/26/82	0.94	.18	3.28	136					
8/ 5/82	2.82	.47	3.07	102					

CUMBERLAND RIVER BASIN

03431700 Richland Creek at Charlotte Avenue, at Nashville, TN

Location.--Lat $36^{\circ}09'04''$, long $86^{\circ}51'16''$, Davidson County, at bridge on Charlotte Avenue, 0.8 miles south of McCann School, and 4.0 miles southwest of the State Capitol in Nashville.

Gage and history.--Dual digital recorders with 5-minute punch intervals, housed in separate shelters. Station established July 27, 1964. Datum of gage is 409.56 feet National Geodetic Vertical Datum of 1929.

Basin characteristics.--D. A. = 24.3 mi^2 ; L = 7.90 mi; S = 33.0 ft/mi; percent previous 68.89; percent impervious = 26.11; percent noneffective impervious = 4.76; percent noncontributing D. A. = 0.24.

Remarks.--Peaks above 4.0 feet are listed.

Runoff events

Date	Total accumu- lated rain- fall (in)	Maxi- mum 5- minute inten- sity (in)	Dis- charge (ft ³ /s)	Date	Total accumu- lated rain- fall (in)	Maxi- mum 5- minute inten- sity (in)	Dis- charge (ft ³ /s)		
9/ 3/76	0.33	.05	5.13	1,010	12/12/79	2.10	.11	6.87	1,850
2/23/77	1.86	.07	6.36	1,580	12/13/79	1.17	.04	7.05	1,960
3/ 3/77	2.44	.06	7.11	1,990	3/17/80	0.77	.07	4.80	879
3/12/77	2.37	.23	10.61	4,580	3/20/80	2.58	.09	6.56	1,680
4/ 4/77	2.81	.11	7.13	2,000	3/24/80	0.42	.03	4.01	606
11/21/77	1.37	.27	5.07	984	3/28/80	1.15	.09	7.40	2,160
11/29/77	1.34	.08	4.19	663	4/14/80	1.87	.10	7.96	2,520
12/ 4/77	0.87	.07	5.58	1,200	5/17/80	5.19	.18	12.23	6,120
12/ 5/77	0.83	.12	6.65	1,730	5/19/80	1.01	.21	5.58	1,200
1/25/78	1.82	.04	5.62	1,220	5/23/80	0.78	.06	4.10	634
3/14/78	1.77	.21	7.80	2,420	6/29/80	2.55	.46	8.04	2,580
5/ 8/78	1.22	.22	8.79	3,100	3/30/81	1.48	.14	4.21	670
12/ 4/78	5.03	.36	8.36	2,790	5/19/81	2.21	.32	4.69	838
12/ 8/78	5.95	.32	12.69	6,590	6/ 6/81	2.43	.20	5.45	1,140
1/20/79	1.76	.03	4.12	641	6/ 7/81	0.04	.01	5.47	1,150
2/25/79	1.59	.10	5.94	1,370	6/22/81	0.74	.13	4.42	741
3/23/79	0.96	.12	4.91	921	7/ 3/81	0.24	.04	4.55	787
4/ 1/79	3.10	.38	7.49	2,220	7/17/81	1.25	.30	6.89	1,860
4/ 2/79	1.48	.14	7.46	2,200	7/24/81	1.50	.22	4.71	845
4/ 8/79	0.84	.13	4.75	860	12/ 1/81	1.70	.05	5.49	1,160
4/12/79	2.35	.16	8.86	3,150	1/ 3/82	2.00	.13	5.86	1,330
5/ 4/79	3.56	.29	10.63	4,590	1/10/82	-	-	6.73	1,770
7/19/79	3.29	.32	8.44	2,850	3/15/82	1.55	.13	5.01	960
7/21/79	0	-	8.65	2,990	4/17/82	1.27	.12	5.93	1,360
11/23/79	1.91	.04	4.27	690	4/26/82	1.26	.47	4.08	628
11/25/79	1.37	.10	4.99	952	5/ 7/82	1.51	.05	4.16	653

CUMBERLAND RIVER BASIN

03432371 Harpeth River tributary at Franklin, TN

Location.--Lat $35^{\circ}55'24''$, long $86^{\circ}52'46''$, Williamson County, upstream from culvert on 11th Avenue and 0.7 mile above mouth.

Gage and history.--Dual digital recorders, with 5-minute punch intervals, housed in separate shelters. Station established November 4, 1977. Datum of gage is set to an arbitrary elevation.

Basin characteristics.--D. A. = 1.81 mi^2 ; L = 2.49 mi ; S = $74.9 \text{ ft}/\text{mi}$; percent pervious = 88.2; percent impervious = 4.68; percent noneffective impervious = 6.96; percent noncontributing D. A. = 0.16.

Remarks.--Peaks above 3.5 feet listed.

Runoff events

Date	Total accumu- lated rain- fall (in)	Maxi- mum 5- minute inten- sity (in)	Dis- charge (ft ³ /s)	Date	Total accumu- lated rain- fall (in)	Maxi- mum 5- minute inten- sity (in)	Dis- charge (ft ³ /s)
11/ 5/77	1.30	.14	3.74	65	1/23/82	.28	4.19
3/13/78	1.91	.18	4.90	147	2/ 9/82	.05	4.20
5/ 8/78	1.39	.25	4.34	106	3/15/82	.17	3.93
12/ 3/78	5.63	.27	6.77	354	4/17/82	.22	4.69
12/ 8/78	2.31	.12	4.42	111	5/ 7/82	.13	4.17
1/ 1/79	2.69	.07	3.61	57	7/ 8/82	.41	3.58
2/25/79	1.62	.13	3.59	56	7/18/82	.40	4.40
4/ 1/79	2.08	.37	3.89	75	7/19/82	.43	4.24
4/ 2/79	1.63	.23	3.79	68	7/22/82	.28	5.35
4/12/79	2.24	.30	4.71	133	8/ 5/82	.37	3.68
5/ 3/79	3.08	.45	3.79	68			
5/ 4/79	3.80	.47	7.78	767			
5/23/79	1.31	.24	3.80	69			
8/26/79	1.64	.15	3.54	53			
9/13/79	5.61	.27	6.49	304			
9/21/79	2.23	.10	3.92	77			
12/12/79	2.24	.08	3.53	52			
3/20/80	3.69	.13	4.53	119			
3/28/80	1.56	.08	4.54	120			
4/14/80	1.76	.13	4.48	115			
5/17/80	3.99	.19	4.95	151			
5/19/80	1.83	.39	4.38	108			
7/22/80	4.69	.46	7.27	500			
4/ 4/81	1.29	.21	3.54	53			
11/30/81	2.05	.08	4.08	89			
1/ 2/82	1.54	.09	3.62	58			

CUMBERLAND RIVER BASIN

03434583 Jones Creek tributary at Dickson, TN

Location.--Lat 36°05'08", long 87°22'39", Dickson County, upstream from culvert at private drive, 0.3 mile northeast of intersection of U.S. Highway 70 bypass and State Highway 48.

Gage and history.--Dual digital recorders with 5-minute punch intervals, housed in separate shelters. Station established April 7, 1978. Datum of gage is set to an arbitrary elevation.

Basin characteristics.--D. A. = 2.29 mi²; L = 1.98 mi; S = 68.9 ft/mi; percent pervious = 82.28; percent impervious = 14.47; percent noneffective impervious = 2.93; percent noncontributing D. A. = 0.32.

Remarks.--Peaks above 4.0 feet listed.

Runoff events

Date	Total accumu- lated rain- fall (in)	Maxi- mum 5- minute inten- sity (in)	Dis- charge (ft ³ /s)	Date	Total accumu- lated rain- fall (in)	Maxi- mum 5- minute inten- sity (in)	Dis- charge (ft ³ /s)
5/ 8/78	2.29	.14	6.25	4/17/81	1.18	.22	4.86
7/13/78	1.25	.33	4.16	191	5/18/81	.017	4.64
12/ 3/78	4.25	.18	5.87	368	5/19/81	.09	7.28
12/ 6/78	0	-	6.51	443	6/ 1/81	.71	6.00
12/ 7/78	3.80	.42	8.65	740	6/ 6/81	1.50	7.05
12/ 8/78	3.48	.19	7.02	507	6/22/81	.12	5.12
1/ 1/79	2.83	.16	4.18	192	7/10/81	0.45	7.41
3/23/79	2.06	.15	5.57	334	7/17/81	0.16	5.68
4/ 1/79	2.84	.58	6.32	420	7/25/81	0.13	6.30
4/ 2/79	0.88	.03	6.80	478	11/27/81	1.06	4.08
4/12/79	3.31	.29	9.30	940	11/30/81	0	4.10
5/ 3/79	2.35	.22	5.88	369	1/23/82	0.66	4.31
5/ 4/79	1.11	.07	5.84	364	2/ 8/82	0.08	4.92
5/20/79	1.67	.24	4.28	202	3/15/82	1.28	4.35
6/21/79	1.13	.11	4.01	178	4/17/82	6.04	5.54
7/ 8/79	1.20	.18	4.51	223	5/15/82	1.41	5.06
7/25/79	0.67	.29	4.23	197			
8/21/79	1.29	.32	5.12	284			
8/25/79	1.14	.08	4.63	235			
9/ 1/79	1.32	.35	4.42	215			
9/13/79	5.62	.10	7.88	623			
12/13/79	2.88	.11	4.88	260			
3/20/80	2.70	.11	4.42	215			
5/17/80	2.41	.10	6.10	394			
6/29/80	3.29	.22	7.32	546			
8/12/80	0.43	.10	4.12	187			

TENNESSEE RIVER BASIN

03466361 Richland Creek at Greeneville, TN

Location.--Lat $36^{\circ}08'33''$, long $82^{\circ}49'27''$, Greene County, at sewage plant, 0.2 mile upstream from bridge on Old Asheville Highway, and at mile 6.3.

Gage and history.--Dual digital recorders with 5-minute punch intervals, housed in separate shelters. Station established November 4, 1977. Datum of gage is set to an arbitrary elevation.

Basin characteristics.--D. A. = 3.48 mi^2 ; L = 3.09 mi ; S = $76.3 \text{ ft}/\text{mi}$; percent pervious = 78.44; percent impervious = 18.41; percent noneffective impervious = 3.13; percent noncontributing D. A. = .016.

Remarks.--Peaks above 3.0 feet listed.

Runoff events

Date	Total accumu- lated rain- fall (in)	Maxi- mum 5- minute inten- sity (in)	Dis- charge (ft ³ /s)	Date	Total accumu- lated rain- fall (in)	Maxi- mum 5- minute inten- sity (in)	Dis- charge (ft ³ /s)		
11/ 6/77	1.28	.14	3.42	160	4/20/81	1.11	.14	3.65	187
12/25/77	1.13	.04	3.37	154	5/28/81	1.03	.11	3.48	166
8/ 4/78	1.03	.27	4.65	335	6/ 6/81	1.75	.59	6.10	646
8/ 7/78	1.89	.15	4.10	247	7/ 5/81	1.21	.19	4.02	236
8/14/78	1.76	.38	4.65	335	7/ 7/81	0.80	.26	4.85	371
9/ 2/78	0.43	.11	3.64	185	7/24/81	0.76	.19	3.52	171
9/22/78	0.98	.11	4.47	305	8/ 6/81	1.22	.23	3.93	223
4/ 4/79	0.37	.01	3.09	125	8/16/81	0.97	.18	4.67	339
6/ 7/79	1.08	.40	4.14	253	9/ 3/81	1.01	.26	3.99	232
6/19/79	0.35	.11	3.22	138	9/15/81	3.08	.20	4.15	255
7/ 4/79	1.36	.26	4.60	326	11/27/81	0.94	.25	4.61	328
7/19/79	1.36	.37	7.00	901	1/ 3/82	1.18	.03	3.07	123
7/21/79	1.90	.12	8.45	1,420	1/ 4/82	0.70	.15	4.40	293
7/27/79	0.75	.11	3.38	155	1/21/82	0.85	.06	4.02	236
8/21/79	1.00	.27	4.65	335	2/ 3/82	1.79	.04	4.31	279
9/30/79	0.45	.10	3.07	123	3/26/82	0.23	.05	3.76	200
3/ 8/80	1.13	.07	3.40	157	5/26/82	0.77	.26	3.74	198
3/21/80	1.78	.04	3.89	218	6/ 5/82	0.40	.08	3.21	137
5/23/80	0.54	.19	3.66	188	6/12/82	1.10	.22	4.29	276
6/16/80	0.95	.27	3.23	139	6/26/82	1.43	.38	5.40	481
7/ 3/80	2.25	.14	3.79	204	7/18/82	0.07	.03	3.57	177
8/20/80	0.70	.19	3.16	132	7/31/82	4.49	.74	6.57	773
8/22/80	0.58	.18	3.57	177	8/ 9/82	0.87	.06	3.57	177
9/10/80	1.18	.16	3.57	177	9/ 1/82	1.69	.16	5.33	466
9/24/80	1.62	.53	5.72	553	8/11/83	1.51	.42	5.27	454
10/18/80	1.37	.13	3.54	173					

TENNESSEE RIVER BASIN

03492006 Turkey Creek at Morristown, TN

Location.--Lat $36^{\circ}14'09''$, long $83^{\circ}17'51''$, Hamblen County, 300 feet downstream from South Outer St., and 1.1 mile upstream from mouth.

Gage and history.--Dual digital recorders with 5-minute punch intervals, housed in separate shelters. Station established December 9, 1977. Datum of gage is set to an arbitrary elevation.

Basin characteristics.--D. A. = 5.09 mi^2 ; L = 4.16 mi ; S = $53.8 \text{ ft}/\text{mi}$; percent pervious = 86.61; percent impervious = 7.09; percent noneffective impervious = 5.98; percent noncontributing D. A. = 0.32.

Remarks.--Peaks above 3.0 feet listed.

Runoff events

Date	Total rain- fall (in)	Maxi- accumu- lated rain- fall inten- sity (in)	5- minute Stage (ft)	Dis- charge (ft ³ /s)	Date	Total rain- fall (in)	Maxi- accumu- lated rain- fall inten- sity (in)	5- minute Stage (ft)	Dis- charge (ft ³ /s)
12/ 4/77	-	-	3.27	158	9/10/80	1.51	.15	3.85	211
6/ 8/78	3.44	.14	5.68	898	9/17/80	1.03	.05	3.38	166
7/ 8/78	0.38	.13	3.00	136	10/18/80	1.03	.27	3.27	158
7/27/78	0.88	.12	3.70	195	2/ 1/81	1.17	.13	3.00	130
8/11/78	-	-	4.65	329	6/ 1/81	1.23	.29	3.80	206
9/10/78	1.33	.59	3.39	167	6/ 4/81	0.40	.06	3.00	136
12/ 9/78	1.71	.11	3.03	139	6/ 6/81	1.19	.08	3.57	182
3/ 4/79	2.11	.05	4.41	282	6/30/81	1.28	.14	4.74	352
5/ 4/79	0.83	.11	3.06	141	7/ 1/81	1.61	.22	3.82	208
6/ 1/79	0.13	.02	3.02	138	7/ 5/81	1.12	.22	3.54	180
7/ 4/79	1.36	.44	4.16	246	7/24/81	0.38	.11	3.57	182
7/20/79	1.20	.06	3.43	171	1/ 3/82	2.87	.23	3.01	137
7/21/79	3.33	.26	4.96	412	1/ 4/82	1.54	.32	3.35	164
7/25/79	0.81	.21	3.85	211	5/27/82	0.85	.44	4.13	243
8/28/79	1.22	.26	5.11	462	6/27/82	0.71	.14	4.84	377
3/ 8/80	1.34	.28	4.19	249	7/ 8/82	0.96	.20	4.43	285
3/21/80	2.13	.07	3.92	220	7/17/82	1.26	.28	3.15	148
7/ 3/80	2.27	.40	5.02	432	7/31/82	5.92	1.29	6.30	1,860
7/ 4/80	0.74	.28	3.25	156					
7/21/80	0.96	.18	4.58	312					
7/26/80	0.58	.13	3.81	207					
8/ 1/80	0.76	.15	5.24	517					
8/ 4/80	2.24	.72	5.49	709					
8/11/80	0	-	3.56	182					
8/19/80	0.95	.27	3.16	149					
8/20/80	0.02	.01	3.40	168					

TENNESSEE RIVER BASIN

03499007 Pistol Creek at Alcoa, TN

Location.--Lat $35^{\circ}46'08''$, long $83^{\circ}58'58''$, Blount County, about 150 feet upstream from Calderwood Ave., 7.6 miles upstream from mouth.

Gage and history.--Dual digital recorders with 5-minute punch intervals, housed in separate shelters. Station established January 4, 1978. Datum of gage is set to an arbitrary elevation.

Basin characteristics.--D. A. = 15.7 mi²; L = 8.27 mi; S = 25.8 ft/mi; percent pervious = 88.40; percent impervious = 6.51; percent noneffective impervious = 5.09; percent noncontributing D. A. = 0.

Remarks.--Peaks above 4.0 feet listed.

Runoff events

Date	Total rain- fall (in)	Maxi- mum 5- rain- fall inten- sity (in)	Stage	Dis- charge (ft ³ /s)	Date	Total rain- fall (in)	Maxi- mum 5- rain- fall inten- sity (in)	Stage	Dis- charge (ft ³ /s)
	accumu- lated rain- fall (in)	minute inten- sity (ft)	Dis- charge (ft ³ /s)	Stage		accumu- lated rain- fall (in)	minute inten- sity (ft)	Dis- charge (ft ³ /s)	
1/ 8/78	1.23	.05	4.24	210	3/21/80	3.06	.11	6.36	733
1/25/78	0.86	.03	4.61	255	3/28/80	0.95	.04	4.43	231
1/26/78	0.03	.01	4.57	250	4/13/80	1.49	.07	5.88	551
5/ 4/78	1.28	.15	4.43	231	6/24/80	1.41	.46	4.91	298
6/ 8/78	2.87	.19	4.84	288	7/ 3/80	2.03	.33	5.19	350
6/12/78	1.10	.37	5.05	321	7/27/80	1.02	.34	4.03	192
7/16/78	0.94	.10	4.28	214	9/17/80	1.39	.16	4.63	258
7/25/78	2.21	.29	4.55	247	9/24/80	1.85	.40	4.98	309
7/31/78	1.38	.39	4.79	281	2/ 2/81	0.24	.08	4.18	205
8/16/78	0.01	.01	4.44	232	6/ 4/81	0.69	.17	5.77	514
12/ 9/78	1.87	.09	4.74	273	6/ 6/81	1.49	.27	7.63	1,420
1/20/79	2.26	.03	4.76	276	6/23/81	3.48	.73	8.85	2,440
2/24/79	0.88	.04	4.33	219	8/ 6/81	0.91	.15	4.95	304
3/ 4/79	2.00	.10	5.54	443	8/ 8/81	1.29	.23	4.98	309
5/23/79	2.19	.13	4.78	279	9/ 6/81	1.13	.18	4.47	236
7/15/79	1.33	.31	4.86	291	4/27/82	1.16	.12	4.87	292
7/20/79	1.35	.09	4.96	306	5/27/82	1.72	.38	5.18	348
7/21/79	0.65	.07	4.09	197	5/28/82	1.78	.30	6.42	759
7/22/79	0.49	.15	4.34	220	7/31/82	1.36	.23	5.47	423
7/27/79	0.08	.02	5.42	409	8/ 9/82	1.03	.21	4.00	189
7/29/79	0	-	5.07	325	9/ 1/82	1.22	.22	4.43	231
8/31/79	1.34	.39	5.15	341	9/ 2/82	1.05	.16	4.65	261
11/ 1/79	0.10	.07	4.59	253	9/26/82	1.25	.44	4.52	243
1/ 8/80	0	-	4.63	258					
1/22/80	1.59	.03	5.01	314					
3/ 8/80	1.18	.51	4.70	268					

TENNESSEE RIVER BASIN

03566036 South Mouse Creek at Cleveland, TN

Location.--Lat $35^{\circ}10'30''$, long $84^{\circ}52'37''$, Bradley County, at bridge on 20th Street, 16.2 miles upstream from mouth.

Gage and history.--Dual digital recorders with 5-minute punch intervals, housed in separate shelters. Station established November 17, 1977. Datum of gage is set to an arbitrary elevation.

Basin characteristics.--D. A. = 7.31 mi^2 ; L = 4.07 mi; S = 24.3 ft/mi; percent pervious = 78.85; percent impervious = 17.35; percent noneffective impervious = 3.55; percent noncontributing D. A. = 0.25.

Remarks.--Peaks above 3.0 feet listed.

Runoff events

Date	Total accumu- lated rain- fall (in)	Maxi- mum 5- minute inten- sity (in)	Stage	Dis- charge (ft ³ /s)	Date	Total accumu- lated rain- fall (in)	Maxi- mum 5- minute inten- sity (in)	Stage	Dis- charge (ft ³ /s)
1/ 8/78	1.31	.07	4.42	397	9/27/79	2.42	.04	4.26	371
1/25/78	1.62	.03	4.31	379	9/28/79	1.34	.07	3.61	274
4/18/78	2.81	.23	4.76	455	3/ 7/80	1.88	.08	4.38	390
12/ 4/78	1.04	-	3.78	298	3/17/80	0.39	.02	4.75	453
12/ 9/78	1.46	-	4.60	427	3/20/80	5.93	.22	6.71	852
1/ 1/79	1.64	-	3.19	219	5/23/80	0.71	.22	3.09	206
1/ 7/79	0.84	-	3.04	201	8/11/80	1.58	.29	3.86	310
1/20/79	1.05	-	3.24	225	9/27/80	0	-	3.26	227
2/25/79	0.95	.14	3.44	251	2/10/81	2.04	.04	3.38	243
3/ 4/79	2.85	.05	5.90	673	3/30/81	1.68	.04	3.49	258
4/ 3/79	1.01	.03	3.41	247	4/ 5/81	1.34	.28	4.17	357
4/12/79	1.90	.11	4.08	343	4/17/81	0.61	-	3.36	240
4/13/79	1.22	.03	4.98	494	4/23/81	0.85	-	3.31	234
4/26/79	1.47	.08	3.04	201	5/27/81	0.27	-	3.21	221
5/ 4/79	0.64	.28	3.19	219	6/ 7/81	1.79	-	3.26	227
5/21/79	2.31	.26	6.45	792	7/16/81	2.14	.43	6.43	788
5/23/79	3.91	.35	7.34	1,000	7/29/81	0.16	.02	3.07	204
5/31/79	2.17	.27	3.26	227	8/20/81	1.59	.09	4.80	462
6/24/79	0.56	.16	3.25	226	11/19/81	1.09	.26	3.78	298
7/13/79	0.63	.05	3.13	211	11/27/81	1.63	.19	3.63	277
7/20/79	2.50	.33	3.96	325	12/ 1/81	1.48	.11	3.96	325
7/21/79	0.86	.04	3.70	287	1/ 4/82	0	-	5.53	598
7/28/79	0.69	.32	3.02	199	2/ 2/82	1.42	.03	3.06	203
8/ 3/79	0.76	.14	3.38	234	2/ 3/82	0.39	.05	3.46	254
8/26/79	1.68	.17	5.32	557	2/ 9/82	1.15	.11	3.19	219
9/ 3/79	0.71	.09	4.21	363	3/15/82	2.39	.14	5.65	622
9/ 6/79	0.78	.38	3.13	211	3/21/82	1.61	.35	4.51	412
9/21/79	1.64	.15	4.13	351	6/13/82	1.02	.18	4.84	469

TENNESSEE RIVER BASIN

03566036 South Mouse Creek at Cleveland, TN--Continued

Runoff events

Date	Total rain- fall	Maxi- mum 5- rain- fall inten- sity	Stage	Dis- charge	Date	Total rain- fall	Maxi- mum 5- rain- fall inten- sity	Stage	Dis- charge
	(in)	(in)	(ft)	(ft ³ /s)		(in)	(in)	(ft)	(ft ³ /s)
6/16/82	1.36	.29	4.10	346					
7/ 8/82	0.87	.26	3.83	305					
7/23/82	0.57	.18	3.40	246					
7/31/82	2.04	.37	4.47	405					
8/ 9/82	1.37	.39	3.47	255					
9/ 2/82	1.17	.26	5.00	497					

TENNESSEE RIVER BASIN

03582395 Tanyard Branch at Fayetteville, TN

Location.--Lat 35°09'02", long 86°34'22", Lincoln County, upstream from West Cambell Street.

Gage and history.--Dual digital recorders with 5-minute punch intervals, housed in separate shelters. Station established November 1, 1977. Datum of gage is set to an arbitrary elevation.

Basin characteristics.--D. A. = 0.47 mi²; L = 0.65 mi; S = 184 ft/mi; percent pervious = 30.7; percent impervious = 48.3; percent noneffective impervious = 20.0; percent noncontributing D. A. = 1.0.

Remarks.--Peaks above 3.0 listed.

Runoff events

Date	Total accumu- lated rain- fall (in)	Maxi- mum 5- minute inten- sity (in)	Dis- charge (ft ³ /s)	Date	Total accumu- lated rain- fall (in)	Maxi- mum 5- minute inten- sity (in)	Dis- charge (ft ³ /s)
11/ 5/77	2.90	.14	3.00	6/30/82	1.04	.30	3.24
3/14/78	1.41	.29	3.60	168	7/11/82	1.02	3.04
4/25/78	0.82	.46	3.14	79.8	7/22/82	1.25	3.88
5/ 8/78	1.77	.18	3.6	171	8/ 5/82	0.83	3.12
6/ 7/78	1.77	.24	3.05	68.1	8/16/82	1.48	3.61
6/ 8/78	1.84	.23	3.62	173	8/23/82	0.48	3.20
7/ 2/78	1.27	.29	3.19	86.9	4/ 5/83	5.20	4.52
7/ 3/78	1.03	.18	3.13	78.4	5/ 3/83	1.11	3.05
7/25/78	0	-	3.86	238	5/ 8/83	1.35	3.87
8/ 4/78	0	-	3.44	131	5/15/83	1.12	3.12
8/14/78	1.06	.33	3.42	127	5/18/83	1.86	5.17
1/ 1/79	2.12	.20	3.58	163	5/20/83	1.36	3.29
4/12/79	3.09	.20	3.36	115	6/ 4/83	0.72	3.22
5/ 4/79	0.77	.29	3.35	114	6/ 6/83	2.55	5.22
6/ 3/79	1.87	.38	5.43	607	6/23/83	1.50	3.04
7/20/79	2.42	.26	3.14	79.8	6/27/83	1.24	3.77
3/20/80	4.01	.43	4.25	342			
6/24/80	1.95	.31	3.50	144			
6/29/80	1.19	.30	3.20	88.3			
5/31/81	0.83	.34	3.03	65.7			
6/ 4/81	1.28	.30	3.53	151			
1/21/82	0.94	.22	3.27	99.6			
1/23/82	1.40	.13	3.44	131			
3/15/82	1.21	.36	3.55	156			
3/21/82	1.86	.23	3.24	94.7			
4/17/82	1.38	.27	3.67	187			

TENNESSEE RIVER BASIN

03595520 Grindstone Hollow Creek at Manchester, TN

Location.--Lat 35°28'56", long 86°05'33", Coffee County, upstream from culvert at Oakdale Street and at river mile 0.6.

Gage and history.--Dual digital recorders with 5-minute punch interval, housed in separate shelter. Station established October 27, 1977. Datum of gage is set to an arbitrary elevation.

Basin characteristics.--D. A. = 2.11 mi²; L = 2.60 mi; S = 28.2 ft/mi; percent pervious = 70.83; percent impervious = 21.5; percent noneffective impervious = 7.47; percent noncontributing D. A. = 0.20.

Remarks.--Peaks above 3.0 feet listed.

Runoff events

Date	Total accumu- lated rain- fall (in)	Maxi- mum 5- minute inten- sity (in)	Dis- charge (ft ³ /s)	Date	Total accumu- lated rain- fall (in)	Maxi- mum 5- minute inten- sity (in)	Dis- charge (ft ³ /s)		
11/21/77	3.01	.03	3.37	141	8/ 4/80	2.37	.40	5.23	319
3/14/78	1.48	.24	3.63	165	9/ 2/80	0.95	.29	3.08	115
4/30/78	2.30	.14	4.03	201	1/ 3/82	4.18	.16	5.62	361
5/ 8/78	1.78	.14	4.12	208	1/21/82	1.46	.10	4.52	246
6/ 8/78	4.24	.40	5.37	334	1/23/82	1.41	.17	4.08	205
6/12/78	1.13	.51	3.27	132	8/16/82	3.76	-	7.54	589
7/ 2/78	1.47	.31	3.03	111					
12/ 8/78	1.85	.07	3.24	130					
1/ 1/79	2.50	.27	4.44	238					
1/ 7/79	1.77	.03	3.42	146					
1/20/79	1.86	.04	3.06	113					
1/21/79	0.68	.03	3.35	140					
2/25/79	2.69	.36	5.67	367					
3/ 3/79	2.39	.05	4.50	244					
4/ 2/79	1.65	.09	3.34	139					
4/12/79	2.13	.14	3.31	136					
7/25/79	2.27	.13	4.34	228					
8/26/79	5.04	.58	6.86	508					
9/27/79	3.15	.09	3.48	151					
11/23/79	2.14	.08	3.26	131					
3/ 7/80	1.57	.08	3.42	146					
3/ 8/80	1.28	.34	4.51	245					
3/17/80	1.57	.03	3.07	114					
3/20/80	4.24	.14	6.32	442					
3/28/80	1.45	.07	3.67	168					
7/26/80	3.40	.30	3.18	124					

TENNESSEE RIVER BASIN

03607274 Bailey Fork Creek tributary at Paris, TN

Location.--Lat 36°18'17", long 88°17'39", Henry County, downstream from bridge on Wilson Street.

Gage and history.--Dual digital recorders with 5-minute punch intervals, housed in separate shelters. Station established February 17, 1978. Datum of gage is set to an arbitrary elevation.

Basin characteristics.--D. A. - 1.04 mi²; L = 2.34 mi; S = 57.1 ft/mi; percent pervious = 82.42; percent impervious - 15.6; percent noneffective impervious = 1.98; percent noncontributing D. A. = 0.

Remarks.--Peaks above 2.5 feet listed.

Runoff events

Date	Total accumu- lated rain- fall (in)	Maxi- mum 5- minute inten- sity (in)	Stage	Dis- charge (ft ³ /s)	Date	Total accumu- lated rain- fall (in)	Maxi- mum 5- minute inten- sity (in)	Stage	Dis- charge (ft ³ /s)
	accu- mum 5- minute inten- sity (in)	Stage	Dis- charge (ft ³ /s)	accu- mum 5- minute inten- sity (in)		Stage	Dis- charge (ft ³ /s)	Stage	Dis- charge (ft ³ /s)
5/12/78	1.38	.36	*2.82	174	8/ 2/79	0.1	.01	2.86	33.5
6/ 7/78	1.28	.24	*2.15	130	8/10/79	0.60	.29	3.17	53.8
8/30/78	1.13	.25	*2.16	131	8/21/79	4.18	.19	5.87	225
9/12/78	1.58	.33	*2.23	135	11/ 9/79	0.99	.11	2.94	38.4
11/17/78	1.54	.23	*2.20	133	11/23/79	3.03	.03	3.60	88
12/ 3/78	4.93	.24	*5.07	282	12/23/79	1.43	.10	4.56	154
12/ 7/78	1.56	.13	*2.38	144	12/24/79	0.78	.14	4.61	157
12/ 8/78	4.11	.32	*5.23	289	1/11/80	0.61	.04	2.79	29.4
1/20/79	2.07	.07	*2.24	136	4/13/80	0.80	.05	2.77	28.2
2/22/79	0.73	.52	*2.05	123	5/16/80	0.60	.08	2.53	15.9
2/23/79	1.55	.16	*3.66	215	6/ 8/80	0.47	.14	2.69	23.8
2/25/79	0.95	.07	*2.04	122	6/29/80	2.85	1.99	7.51	300
3/23/79	1.39	.17	*2.35	142	7/22/80	3.11	.42	4.95	177
4/ 1/79	3.98	.23	*5.93	320	10/27/80	0.76	.04	2.59	18.6
4/11/79	1.88	.29	*2.62	158	11/17/80	1.86	.06	2.90	35.9
5/ 3/79	2.43	.25	*5.32	293	2/ 1/81	1.50	.12	2.99	41.6
5/ 4/79	0.81	.04	*2.38	144	3/ 4/81	1.36	.08	2.96	39.7
6/21/79	1.57	.34	*4.91	275	3/29/81	1.38	.10	2.86	33.5
6/23/79	0.49	.10	*2.38	144	5/18/81	0.56	.23	2.63	20.6
7/ 2/79	0.86	.05	*2.40	145	6/ 2/81	0.49	.23	2.66	22.3
7/ 8/79	1.47	.19	*4.71	266	6/ 4/81	0.45	.14	2.73	26.0
7/ 9/79	0.29	.15	*2.58	156	6/ 5/81	1.50	.17	3.94	113
7/12/79	1.68	.08	*3.91	228	6/ 6/81	3.21	.34	7.88	317
7/15/79	0.80	.18	*3.04	184	10/17/81	1.57	.16	3.83	105
7/28/79	0.44	.12	2.93	37.8	1/ 2/82	0.82	.03	3.02	43.6

*Prior to July 19, 1979, gage located 10 feet upstream from present site at a datum 2.02 feet lower than present gage datum.

TENNESSEE RIVER BASIN

03607274 Bailey Fork Creek tributary at Paris, TN--Continued

Runoff events

Date	Total rain- fall	Maxi- mum 5- minute inten- sity	Stage	Dis- charge (ft ³ /s)	Date	Total rain- fall	Maxi- mum 5- minute inten- sity	Stage	Dis- charge (ft ³ /s)
	(in)	(in)	(ft)	(ft ³ /s)		(in)	(in)	(ft)	(ft ³ /s)
1/ 9/82	1.28	.62	3.73	97.4					
4/16/82	2.55	-	4.65	159					
5/28/82	0.32	-	2.78	28.8					
9/13/82	2.29	.15	4.06	122					
11/28/82	2.00	-	3.67	92.9					
12/ 3/82	2.51	.13	6.61	261					
3/ 5/83	1.69	.17	4.10	125					
4/14/83	1.77	.11	4.77	166					
5/14/83	1.32	.37	5.82	222					
5/15/83	1.45	.06	3.95	113					
5/18/83	3.09	.14	5.50	206					
5/21/83	0.60	.06	3.21	56.7					

OBION RIVER BASIN

07027530 South Fork Forked Deer River tributary at Jackson, TN

Location.--Lat 35°37'01", long 88°49'19", Madison County, upstream from culvert at Farrar Street at Jackson and 20 feet east of intersection of Union Street.

Gage and history.--Dual digital recorders with 5-minute punch interval, housed in separate shelters. Station established December 2, 1977. Datum of gage is set to an arbitrary elevation.

Basin characteristics.--D. A. = 0.98 mi²; L = 1.64 mi; S = 54.9 ft/mi; percent pervious = 44.98; percent impervious = 39.86; percent noneffective impervious = 15.16; percent noncontributing D. A. = 0.

Remarks.--Peaks above 6.5 feet listed.

Runoff events

Date	Total rain- fall (in)	Maxi- mum 5- rain- fall inten- sity (in)	Stage (ft)	Dis- charge (ft ³ /s)	Date	Total rain- fall (in)	Maxi- mum 5- rain- fall inten- sity (in)	Stage (ft)	Dis- charge (ft ³ /s)
3/13/78	1.37	.25	8.85	367	4/ 8/80	1.59	.35	8.07	297
4/24/78	0.56	.26	6.55	172	6/19/80	1.62	.46	9.76	453
5/ 1/78	2.08	.12	7.70	265	6/23/80	2.11	.35	8.86	368
5/ 7/78	2.37	.13	8.09	298	6/29/80	4.03	.59	11.61	643
5/ 8/78	0.99	.30	6.95	203	7/22/80	2.33	.16	6.58	174
5/29/78	2.14	.32	8.68	351	9/24/80	1.00	.41	8.38	324
6/18/78	1.41	.18	6.55	172	10/17/80	1.42	.42	8.50	335
11/17/78	0.62	.24	6.79	190	5/24/81	0.66	.31	7.26	228
12/ 3/78	3.98	.11	6.70	183	5/30/81	1.51	.28	8.67	350
12/ 7/78	2.89	.30	6.99	206	6/ 6/81	2.09	.06	10.49	526
12/ 7/78	2.89	.30	7.54	251	7/ 6/81	2.04	.23	8.26	313
12/ 8/78	2.20	.11	8.02	292	7/18/81	0.34	.13	7.58	255
3/23/79	1.62	.15	7.16	220	7/28/81	0	-	9.98	475
4/ 1/79	3.44	.21	10.62	540	8/28/81	0.88	.33	6.59	175
4/11/79	3.83	.56	11.42	623	10/17/81	2.06	.18	8.55	340
5/ 3/79	3.96	.29	10.02	479	1/22/82	1.49	.26	9.74	452
5/23/79	1.53	.15	6.77	189	1/31/82	1.02	.22	6.77	189
6/ 2/79	2.04	.56	10.93	571	6/21/82	1.25	.34	9.60	438
6/20/79	1.61	.31	8.42	328	9/15/82	0.76	.30	6.90	199
7/ 8/79	3.06	.39	11.34	614					
7/12/79	1.66	.10	6.76	188					
7/25/79	0.78	.24	6.69	183					
7/28/79	1.19	.23	9.23	402					
9/13/79	2.94	.17	7.36	236					
9/21/79	2.74	.17	7.11	216					
11/ 9/79	1.35	.23	6.68	182					
3/20/80	3.35	.11	7.55	252					

OBION RIVER BASIN

07028985 Middle Fork Forked Deer River tributary at Humboldt, TN

Location.--Lat $35^{\circ}49'16''$, long $88^{\circ}88'23''$, Gibson County, upstream from culvert at Sixth Street.

Gage and history.--Dual digital recorders with 5-minute punch intervals, housed in separate shelters. Station established January 6, 1978. Datum of gage is set to an arbitrary elevation.

Basin characteristics.--D. A. = 2.12 mi^2 ; L = 2.64 mi ; S = $26.3 \text{ ft}/\text{mi}$; percent pervious = 66.21; percent impervious = 25.37; percent noneffective impervious = 8.07; percent noncontributing D. A. = 0.35.

Remarks.--Peaks above 3.5 feet listed.

Runoff events

Date	Total accumu- lated rain- fall	Maxi- mum 5- minute inten- sity	Stage	Dis- charge (ft ³ /s)	Date	Total accumu- lated rain- fall	Maxi- mum 5- minute inten- sity	Stage	Dis- charge (ft ³ /s)
	(in)	(in)	(ft)	(ft ³ /s)		(in)	(in)	(ft)	(ft ³ /s)
1/ 7/78	-	-	5.29	348	6/23/80	1.40	.16	5.58	397
3/ 2/78	1.25	.03	4.32	209	6/29/80	1.97	.50	4.75	268
3/13/78	1.17	.36	4.94	295	7/ 3/80	0.76	.12	3.94	164
5/ 1/78	1.19	.22	4.44	224	11/17/80	2.24	.08	3.51	121
5/ 7/78	2.04	.09	5.20	334	5/30/81	-	-	3.76	145
5/ 8/78	1.25	.21	5.73	423	6/ 6/81	-	-	6.03	480
5/12/78	1.12	.38	5.54	390	6/11/81	1.91	.28	6.13	499
5/28/78	1.18	.36	4.35	212	7/20/81	-	-	3.84	153
6/21/78	1.15	.41	5.83	442	8/31/81	-	-	3.69	138
11/17/78	-	-	3.90	160	9/ 2/81	-	-	4.02	173
12/ 3/78	-	-	4.48	229	10/17/81	-	-	4.69	259
12/ 7/78	-	-	5.77	430	1/ 2/82	1.21	.14	4.09	181
12/ 8/78	-	-	5.77	430	1/ 3/82	0.87	.18	4.42	221
2/23/79	-	-	5.99	472	1/20/82	1.47	.12	4.62	249
2/25/79	-	-	3.73	142	2/ 8/82	1.47	.06	4.79	273
3/23/79	-	-	3.95	165	9/13/82	13.20	.50	8.30	2,760
4/ 1/79	-	-	5.65	409	11/28/82	2.59	.05	4.15	188
4/11/79	1.55	.17	5.92	458	12/ 3/82	2.40	.21	5.46	376
7/ 8/79	2.71	.33	6.62	616	12/15/82	2.46	.05	5.37	361
7/12/79	1.38	.13	4.19	193	12/25/82	3.38	.36	6.70	640
10/31/79	1.21	.18	3.65	134	4/ 1/83	1.05	.12	4.11	183
12/13/79	1.88	.06	4.47	228	4/ 5/83	0.79	.07	4.50	232
12/23/79	1.29	.07	3.58	127	4/ 8/83	0.68	.06	3.57	126
3/20/80	2.12	.15	4.64	252	4/14/83	1.49	.10	5.61	402
3/23/80	1.08	.09	4.33	210	4/23/83	1.47	.05	5.39	364
4/ 8/80	1.22	.28	3.62	131	4/30/83	3.20	.12	6.03	480
6/19/80	1.00	.48	4.04	175	5/ 3/83	0.83	.17	5.31	351

OBION RIVER BASIN

07028985 Middle Fork Forked Deer River tributary at Humboldt, TN--Continued

Runoff events

Date	Total accumu- lated rain- fall (in)	Maxi- mum 5- minute inten- sity (in)	Dis- charge (ft ³ /s)	Date	Total accumu- lated rain- fall (in)	Maxi- mum 5- minute inten- sity (in)	Dis- charge (ft ³ /s)
	Stage (ft)	Stage (ft)	charge (ft ³ /s)	Stage (ft)	charge (ft ³ /s)		
5/18/83	4.36	-	6.63	619			
5/21/83	1.61	-	6.13	499			

HATCHIE RIVER BASIN

07030147 Town Creek tributary at Covington, TN

Location.--Lat $35^{\circ}33'59''$, long $89^{\circ}38'55''$, Tipton County, on left bank 550 feet downstream of Liberty Ave., and 125 feet west of U.S. Highway 51.

Gage and history.--Dual digital recorders with 5-minute punch intervals, housed in separate recorder shelters. Station established December 1, 1977. Datum of gage is set to an arbitrary elevation.

Basin characteristics.--D. A. 0.75 mi^2 ; L = 1.70 mi; S = 42.7 ft mi ; percent pervious = 78.59; percent impervious = 19.3; percent noneffective impervious = 2.11; percent noncontributing D. A. = 0.

Remarks.--Peaks above 5.5 feet listed.

Runoff events

Date	Total rain- fall (in)	Maxi- mum 5- rain- fall inten- sity (in)	Stage (ft)	Dis- charge (ft^3/s)	Date	Total rain- fall (in)	Maxi- mum 5- rain- fall inten- sity (in)	Stage (ft)	Dis- charge (ft^3/s)
12/ 4/77	1.49	.16	7.83	299	6/23/80	1.40	.34	6.20	134
1/ 7/78	1.96	.20	6.92	202	6/24/80	2.18	.37	7.12	222
5/ 1/78	1.71	.27	6.03	119	11/17/80	2.16	.04	6.33	146
5/ 7/78	4.54	.24	9.56	514	12/ 8/80	1.69	.10	6.15	130
5/ 8/78	1.35	.18	8.58	388	5/ 3/81	-	-	9.51	507
5/27/78	0.92	.23	7.65	279	5/26/81	-	-	6.73	183
6/20/78	1.15	.57	6.29	142	5/30/81	-	-	7.64	278
6/23/78	0.66	.28	5.59	83.7	6/ 5/81	-	-	6.56	167
7/11/78	2.26	.25	7.54	267	6/ 6/81	-	-	9.84	552
8/ 4/78	2.56	.22	8.24	347	7/20/81	-	-	5.74	95.3
8/30/78	2.54	.32	7.10	220	7/28/81	-	-	5.52	78.4
11/17/78	1.38	.22	5.79	99.3	1/ 3/82	1.46	.28	7.47	259
12/ 3/78	2.96	.20	7.52	265	1/20/82	1.19	.08	6.13	128
12/ 7/78	2.45	.22	5.96	113	1/31/82	0.96	.12	6.26	139
12/ 8/78	2.33	.16	8.56	385	4/17/82	4.82	.28	9.21	467
12/31/78	1.06	.21	6.35	147	5/15/82	0.43	.09	6.36	148
2/23/79	2.08	.19	7.83	299	6/16/82	2.92	.18	5.92	110
2/24/79	1.47	.07	6.86	196	8/30/82	2.01	.34	6.88	198
3/ 3/79	2.07	.10	7.60	274					
4/ 1/79	5.23	.34	5.65	88.3					
4/11/79	1.01	.35	7.36	247					
4/23/79	2.43	.09	5.51	77.6					
5/22/79	0.92	.13	5.88	107					
9/20/79	2.16	.09	5.72	93.7					
11/21/79	2.60	.17	6.27	140					
11/25/79	1.04	.06	5.51	77.6					
12/12/79	2.83	.10	7.04	214					

MISSISSIPPI RIVER BASIN

07031758 Cypress Creek at Memphis, TN

Location.--Lat 35°08'51", long 89°57'33", Shelby County, at bridge on Broad Street.Gage and history.--Dual digital recorders with 5-minute punch intervals, housed in separate shelters. Station established November 3, 1977. Datum of gage is set to an arbitrary elevation.Basin characteristics.--D. A. = 4.97 mi²; L = 4.66 mi; S = 19.1 ft/mi; percent pervious = 18.46; percent impervious = 57.77; percent noneffective impervious = 21.36; percent noncontributing D. A. = 2.41.Remarks.--Peaks above 4.0 feet listed.

Runoff events

Date	Total rain- fall	Maxi- mum 5- rain- fall	Dis- charge	Date	Total rain- fall	Maxi- mum 5- rain- fall	Dis- charge		
	(in)	(in)	(ft)		(in)	(in)	(ft)	(ft ³ /s)	
12/ 4/77	2.06	.32	9.90	2,430	3/17/80	0.68	.10	4.36	749
1/ 7/78	0.90	.10	4.23	701	3/23/80	1.35	.07	5.10	1,020
1/24/78	2.02	.07	4.86	942	4/ 8/80	1.45	.23	5.82	1,250
1/25/78	0.94	.03	4.07	641	4/11/80	1.20	.12	4.99	993
3/13/78	1.60	.34	8.26	1,970	6/24/80	4.33	.23	9.28	2,260
5/ 7/78	3.91	.28	10.52	2,610	7/22/80	6.76	.35	7.18	1,660
5/ 8/78	1.35	.35	5.37	1,110	9/16/80	1.34	.12	4.56	822
5/19/78	0.40	.10	6.97	1,590	9/22/80	1.12	.22	4.19	586
6/ 6/78	1.24	.27	7.17	1,650	10/17/80	1.23	.26	4.42	771
7/14/78	3.53	.25	7.28	1,680	10/27/80	1.84	.10	4.90	901
8/ 4/78	1.33	.12	4.55	819	11/17/80	1.44	.12	4.36	749
8/ 8/78	1.86	.34	6.52	1,460	3/29/81	2.11	.09	4.77	902
8/10/78	4.30	.35	10.62	2,630	4/20/81	0.99	.23	4.64	852
8/29/78	1.97	.23	6.26	1,390	4/22/81	0.64	.16	4.69	870
12/20/78	0	-	4.00	615	5/ 9/81	0.84	.17	4.98	989
12/31/78	1.90	.23	5.66	1,200	5/31/81	0.89	.16	4.48	793
2/23/79	1.33	.14	4.83	928	6/ 6/81	1.87	.11	5.87	1,260
3/ 3/79	2.53	.15	7.97	1,880	7/ 5/81	1.43	.28	6.69	1,510
3/23/79	1.07	.13	4.00	615	7/21/81	1.21	.26	4.74	890
4/ 1/79	3.62	.29	9.85	2,420	8/ 6/81	1.20	.43	4.20	690
4/23/79	-	-	4.54	815	8/25/81	0.12	.05	4.28	720
6/ 2/79	1.48	.07	4.59	833	8/31/81	-	-	8.78	2,120
8/22/79	-	-	7.47	1,740	10/17/81	-	-	8.43	2,020
8/24/79	1.33	.21	8.10	1,920	1/ 2/82	1.12	.16	4.28	720
11/21/79	2.19	.20	4.41	767	1/20/82	1.02	.16	5.16	1,040
11/22/79	2.04	.09	4.43	775	1/22/82	1.23	.29	7.46	1,740
12/12/79	2.21	.08	4.48	793	1/31/82	1.03	.23	6.08	1,330
1/ 6/80	.02	.01	5.83	1,250	2/ 9/82	1.79	.17	4.63	8+8
3/16/80	2.32	.06	4.01	619	3/14/82	1.07	.18	4.68	867

MISSISSIPPI RIVER BASIN

07031758 Cypress Creek at Memphis, TN--Continued

Runoff events

Date	Total accumu- lated rain- fall	Maxi- mum 5- minute inten- sity	Stage	Dis- charge	Date	Total accumu- lated rain- fall	Maxi- mum 5- minute inten- sity	Stage	Dis- charge
	(in)	(in)	(ft)	(ft ³ /s)		(in)	(in)	(ft)	(ft ³ /s)
3/20/82	0.64	.26	5.40	1,120					
3/21/82	0.42	.21	4.13	663					
4/17/82	3.14	.96	11.17	2,780					
5/22/82	.95	.33	5.98	1,300					
6/16/82	1.89	.26	7.26	1,680					
6/25/82	0.64	.27	4.79	910					
7/ 4/82	2.37	.65	9.81	2,410					
7/21/82	0.20	.12	4.87	947					
8/ 5/82	0.96	.16	4.23	701					
8/13/82	1.25	.34	5.33	1,090					
10/ 6/82	2.74	-	10.42	2,580					
11/23/82	1.30	.18	5.58	1,170					
12/ 3/82	3.70	.32	7.14	1,640					
12/25/82	3.56	.54	8.89	2,150					
12/27/82	2.74	.17	5.18	1,040					
3/ 5/83	2.82	.17	7.37	1,710					
4/ 1/83	0.64	.10	4.08	645					
4/ 5/83	2.10	.34	6.59	1,480					
4/13/83	1.55	.39	7.40	1,720					
4/23/83	1.36	.14	4.20	690					
5/ 2/83	0.48	.26	4.46	786					
5/12/83	1.48	.21	6.25	1,390					
5/14/83	1.02	.19	8.32	1,980					
5/18/83	1.59	.13	7.77	1,830					
5/21/83	1.84	.28	7.44	1,730					
6/14/83	1.17	.44	5.22	1,060					
6/26/83	0.70	.37	4.27	716					

TENNESSEE RIVER BASIN

85173400 South Fork Dobbs Branch at Chattanooga, TN

Location.--Lat 35°00'36", long 85°17'34", Hamilton County, upstream from culvert at Clio Street at Chattanooga and 0.6 mile upstream from mouth.

Gage and history.--Dual digital recorders with 5-minute punch intervals, housed in separate shelters. Station established December 4, 1979. Datum of gage is set to an arbitrary elevation.

Basin characteristics.--D. A. = 1.12 mi²; L = 1.41 mi; S = 111.3 ft/mi; percent pervious = 64.06; percent impervious = 28.84; percent noneffective impervious = 7.10; percent noncontributing D. A. = 0.

Remarks.--Peaks above 46.00 feet are listed that are not affected by backwater from Chattanooga Creek.

Runoff events

Date	Total rain- fall (in)	Maxi- mum 5- rain- fall inten- sity (in)	Dis- charge (ft ³ /s)	Date	Total rain- fall (in)	Maxi- mum 5- rain- fall inten- sity (in)	Dis- charge (ft ³ /s)
3/ 7/80	1.77	.04	46.23	131			
3/17/80	2.49	.12	47.84	230			
3/21/80	5.96	.12	49.82	380			
4/13/80	1.61	.06	47.09	185			
5/17/80	2.75	.19	47.98	312			
7/26/80	0.82	.25	46.58	154			
8/29/80	1.76	.22	47.24	194			
2/10/81	2.01	.05	46.32	138			
4/ 5/81	1.08	.30	46.60	155			
5/10/81	0.72	.02	47.08	184			
8/20/81	0.99	.10	46.73	165			
1/21/82	1.56	.11	46.92	175			
1/23/82	1.14	.13	47.13	187			
3/14/82	0.63	.20	47.02	181			
3/15/82	1.95	.14	47.85	231			
7/ 8/82	1.31	.03	47.53	211			
8/ 9/82	1.33	.02	47.88	234			
8/11/82	1.00	.03	47.34	200			
11/28/82	1.95	.08	46.07	124			
12/ 1/82	2.25	.09	47.44	205			
12/ 5/82	0.99	.09	46.71	163			
2/ 1/83	2.08	.07	48.06	246			
3/ 6/83	2.69	.14	49.18	328			
4/ 5/83	3.26	.09	47.54	212			
5/19/83	2.81	.08	46.73	163			
5/22/83	1.51	.12	48.28	262			
6/27/83	0.47	.24	46.87	172			